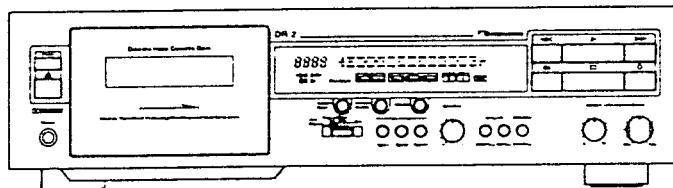


Service Manual

DR-2

Discrete Head Cassette Deck



CONTENTS

1. General	1
2. Test Tapes and Gauges	2
3. Mechanism Ass'y and Parts List	3
3.1. Synthesis	3
3.2. Chassis Ass'y (A01)	4
3.3. Front Chassis Ass'y (B01)	5
3.4. Mechanism Ass'y (B02)	7
4. Mounting Diagrams and Parts List	8
4.1. Bias Volume P.C.B. Ass'y	8
4.2. Input Volume P.C.B. Ass'y	8
4.3. Timer Switch P.C.B. Ass'y	8
4.4. Front P.C.B. Ass'y	8
4.5. Power Supply & Logic P.C.B. Ass'y	9
4.6. Main P.C.B. Ass'y	10
5. Schematic Diagrams	14

1. GENERAL

Reference Service Manual

The base Model of DR-2 is Cassette Deck 1.5. In this Service Manual, identical sections/items are omitted. So, please refer to the Service Manual of Cassette Deck 1.5 (0Q06153A).

1.1. Product Code

A138

1.2. Destinations

USA, CAN, EP, UK, AUS, SAU, OTR, JPN

Abbreviation

USA — U.S.A.	AUS — Australia
CAN — Canada	SAU — Saudi Arabia
EP — Europe	OTR — Other
UK — United Kingdom	JPN — Japan

1.4. Voltage Selector

The voltage selector is installed on the Rear Panel of the DR-2 (OTR & SAU). The voltage selector can select either 110-127V or 220-240V at customer's disposal.

1.3. Cautions/Warnings

(1) Product Safety Notice

Parts marked with the symbol  in the schematic diagram have critical characteristics.

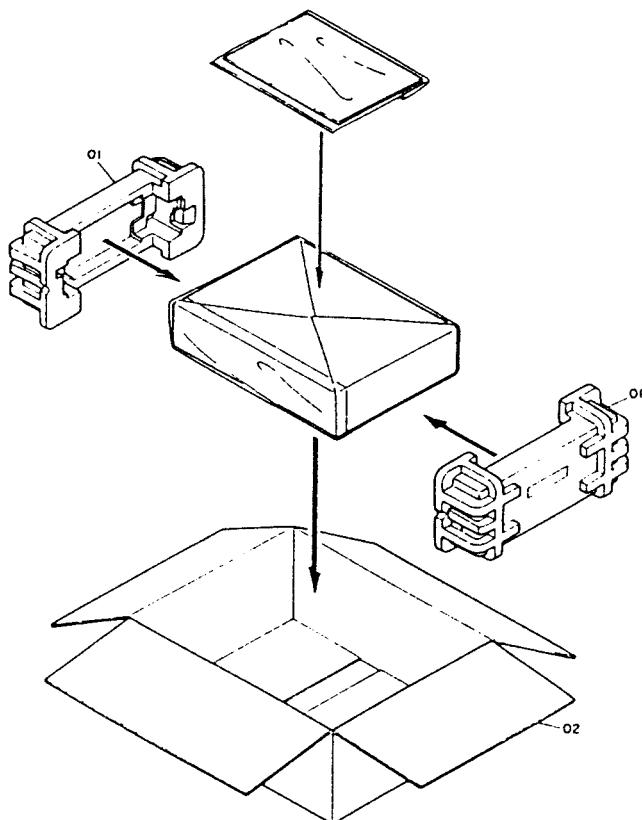
Use ONLY replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

(2) Leakage Current Check/Resistance Check

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.

WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

1.5. Package Ass'y and Accessory Ass'y



Schematic Ref. No.	Part No.	Description	Qty
Package Ass'y			
01	0F04728A	Packing	2
02	0F04717A	Carton Box	1
-	0F04458A	Soft Sheet	1

Schematic Ref. No.	Part No.	Description	Qty
DA04695A	Accessory Ass'y (USA, CAN)	1	
DA04697A	Accessory Ass'y (EP)	1	
DA04696A	Accessory Ass'y (UK)	1	
DA04698A	Accessory Ass'y (AUS, SAU, OTR)	1	
DA04694A	Accessory Ass'y (JPN)	1	
0D06400B	Owner's Manual (English)	1	
0D06416A	Owner's Manual (French) (USA, CAN, EP, UK)	1	
0D06417A	Owner's Manual (German) (EP, UK)	1	
0D06398A	Owner's Manual (Japanese)	1	
0D06431A	Pin-Pin Cord	2	

Fig. 1

2. TEST TAPES AND GAUGES

- (1) 400 Hz Level Tape (DA09005C)
- (2) 1kHz Track Alignment Tape (DA09007C)
- (3) 10 kHz PB Frequency Response Tape (DA09003C)
- (4) 15 kHz PB Frequency Response Tape (DA09002C)
- (5) 20 kHz PB Frequency Response Tape (DA09001C)
- (6) 15 kHz Azimuth Tape (DA09004C)
- (7) 3 kHz Speed and Wow/Flutter Tape (DA09006D)
- (8) Tape Travelling Cassette (DA09071A)
- (9) Reference EXII Tape (DA09168A)
- (10) Reference SX Tape (DA09167A)
- (11) Reference ZX Tape (DA09166A)
- (12) EH Tilt Check Gauge S (DA09088A)
- (13) Stroke Check Gauge S (DA09090A)
- (14) Tape Guide Height Check Gauge S (DA09091A)
- (15) Tilt Check Gauge S (DA09039C)
- (16) Torque Gauge FWD (DA09082A)

3. MECHANISM ASS'Y AND PARTS LIST

3.1. Synthesis

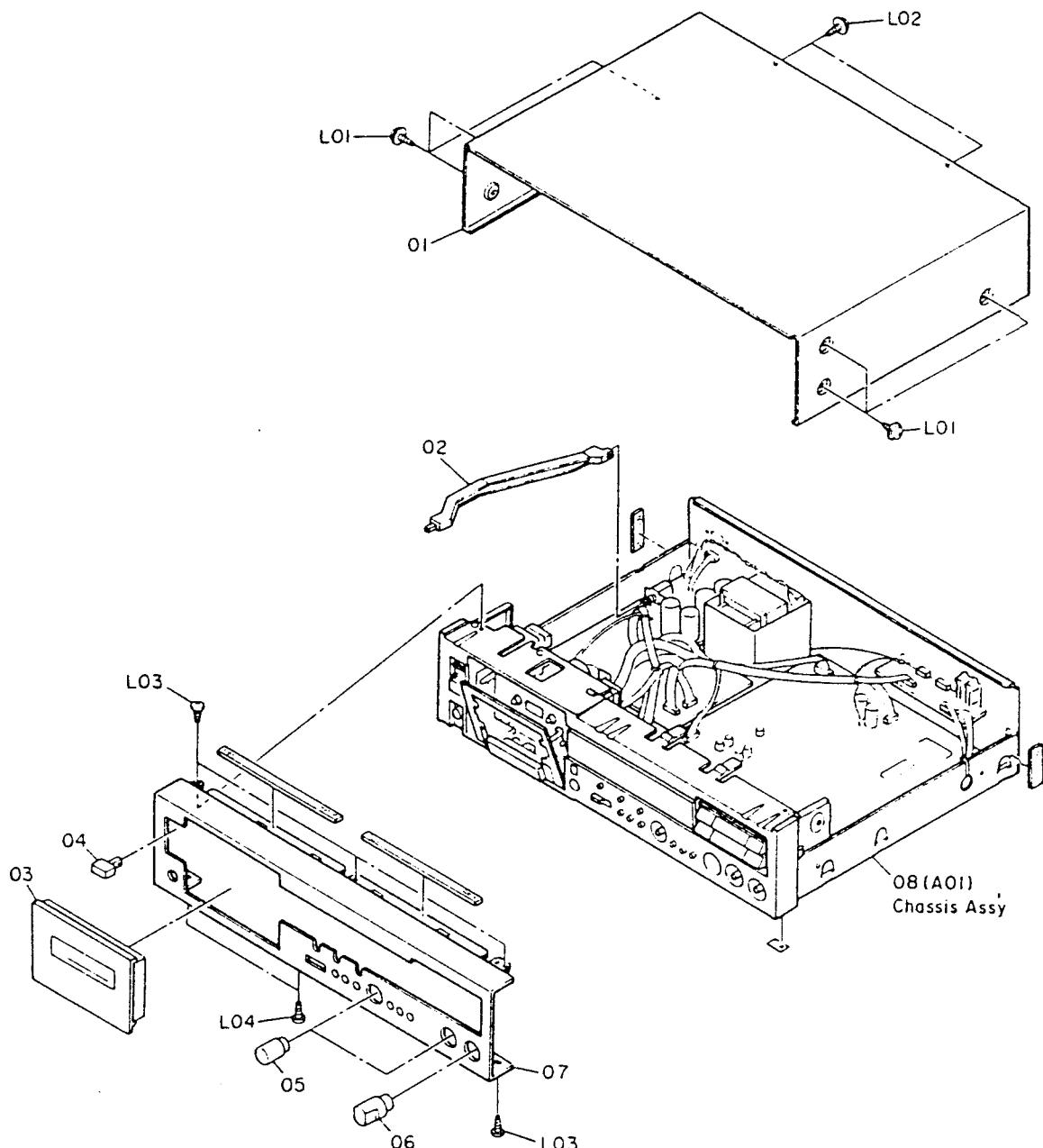


Fig. 3.1

3.1. Synthesis

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
Synthesis							
01	OH06423A	Top Cover	1	L03	OE00921A	BT3x8 + Binding (Black Chromate)	
02	OJ07037C	Power Switch Joint	1	L04	OE03366A	BT3x8 + Binding Projected (Black Chromate)	
03	HA06578A	Cassette Case Cover Ass'y	1				
04	OH06418A	Power Knob	1				
05	HA06502A	Volume Knob Ass'y CDR	2				
06	HA06503A	Volume Knob Ass'y DR	1				
07	OH06456C	Front Panel	1				
08	-	Chassis Ass'y	1				
L01	OE03032A	BT4x8 + Pan Washer Faced (Black Chromate)					
L02	OE03632A	BT3x8 + Binding With Washer (Black Chromate)					

3.2. Chassis Ass'y (A01)

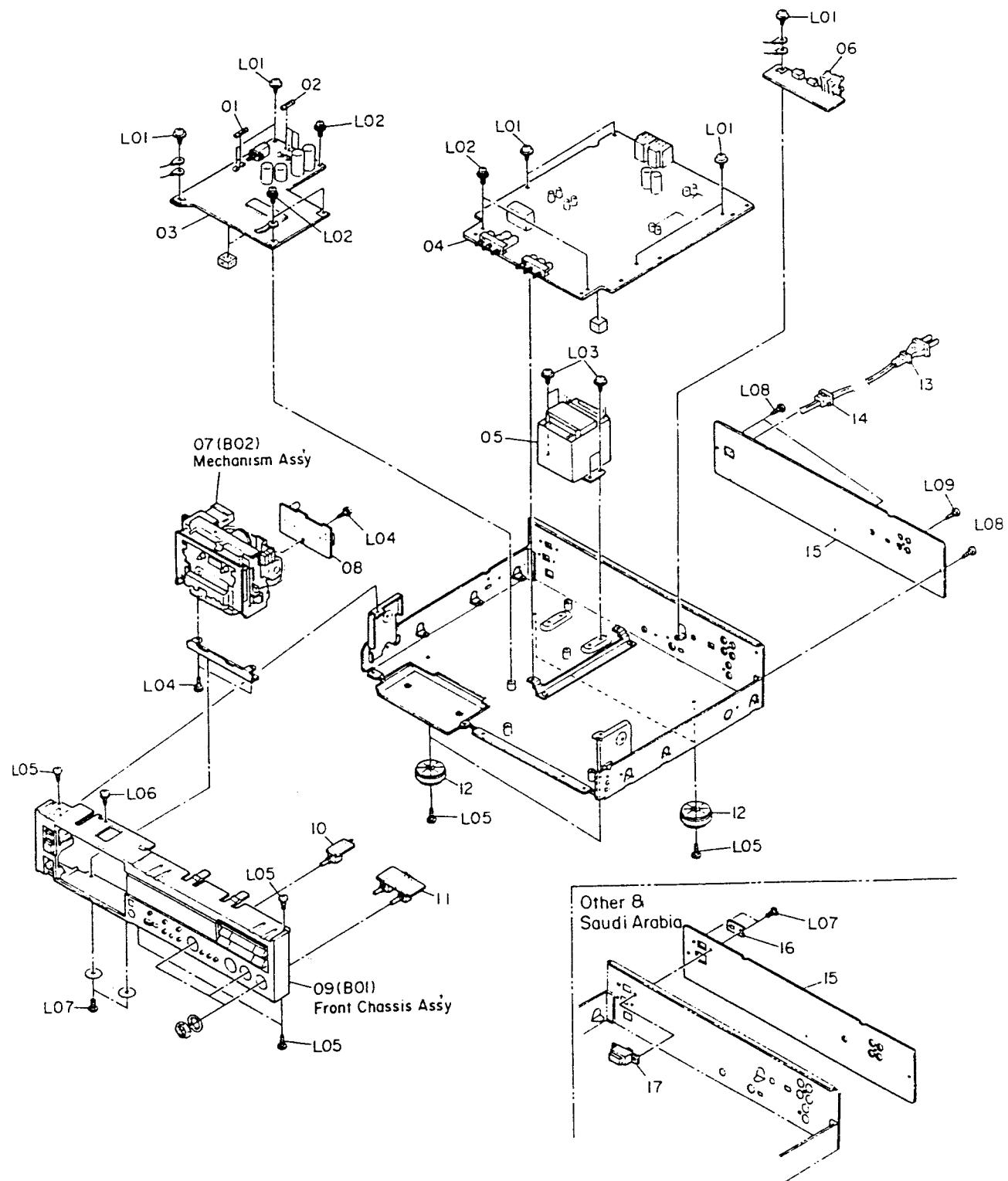


Fig. 3.2

3.3. Front Chassis Ass'y (B01)

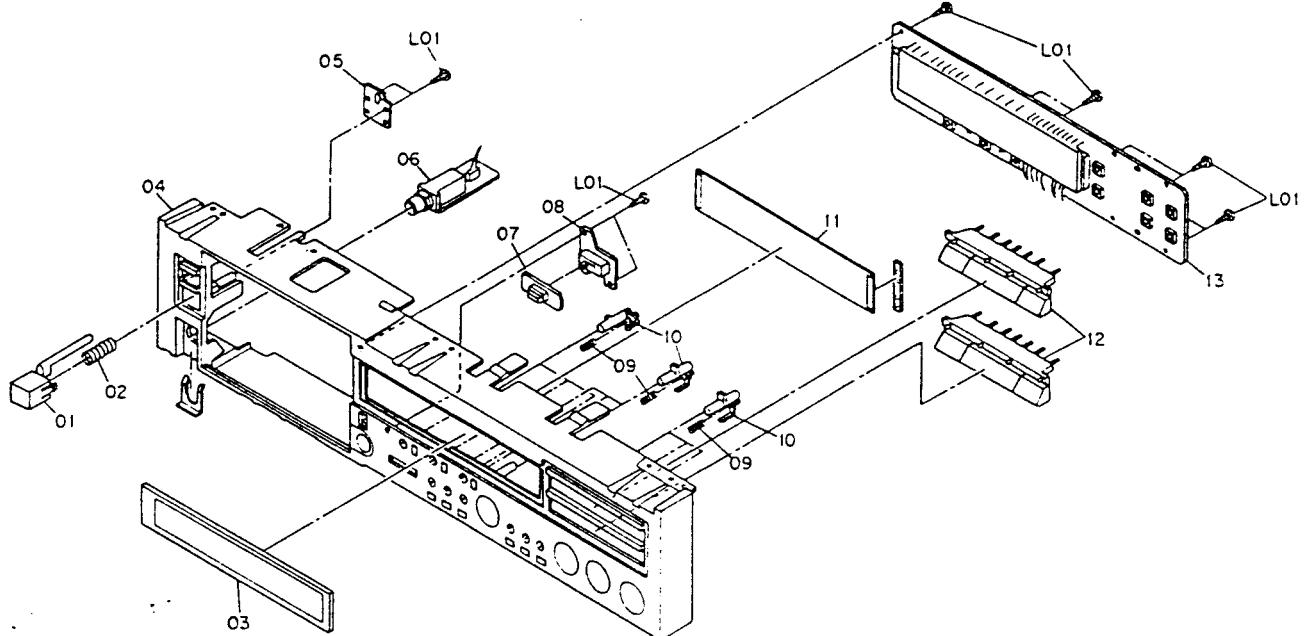


Fig. 3.3

3.2. Chassis Ass'y (A01)

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A01	-	Chassis Ass'y	1	17	OB07092U	Voltage Selector (OTR, SAU)	1
01	OB90493A	Fuse 500mA [F404] (USA, CAN, JPN)	1	L01	OE03157A	BT3x8 + Binding With Washer	
	OB08505A	Fuse F500mA [F404] (EP, UK, AUS, OTR, SAU)	1	L02	OE00607A	M3x8 + Pan (3A)	
02	OB90375A	Fuse 1.6A [F401-403] (USA, CAN, JPN)	3	L03	OE03592A	BT4x6 + Binding Washer Faced (Black Chromate)	
	OB90382A	Fuse T1.25A [F401-403] (EP, UK, AUS, OTR, SAU)	3	L04	OE03435A	M2.6x6 + Binding With Toothed Lock	
03	BA08853A	Power Supply & Logic P.C.B. Ass'y (Except JPN)	1	L05	OE00921A	BT3x8 + Binding (Black Chromate)	
	BA08851A	Power Supply & Logic P.C.B. Ass'y (JPN)	1	L06	OE03212A	BT2.6x6 + Binding Toothed Lock	
04	BA08849A	Main P.C.B. Ass'y	1	L07	OE00985A	M3x6 + Binding (Black Chromate)	
05	OB50183A	Power Transformer 120V (USA, CAN)	1	L08	OE00860A	BT3x6 + Binding (Black Chromate)	
	OB50182A	Power Transformer 230V (EP)	1	L09	OE03749A	PT3x8 + Binding (Black Chromate)	
	OB50179A	Power Transformer 240V (UK, AUS)	1				
	OB50181A	Power Transformer 115-230V (OTR, SAU)	1				
	OB50180A	Power Transformer 100V (JPN)	1				
06	BA08381A	Pin Jack P.C.B. Ass'y	1				
07	CA09201A	Mechanism Ass'y	1				
08	BA08477A	Playback Amp. P.C.B. Ass'y	1				
09	-	Front Chassis Ass'y	1				
10	BA08836A	Bias Volume P.C.B. Ass'y	1				
11	BA08837A	Input Volume P.C.B. Ass'y	1				
12	OH06472A	Leg	4				
13	OB90205A	Power Cord (USA, CAN)	1				
	OB08093U	Power Cord (EP)	1				
	OB08348A	Power Cord (UK)	1				
	OB05241A	Power Cord (AUS)	1				
	OB08533A	Power Cord (OTR, SAU)	1				
	OB08219B	Power Cord (JPN)	1				
14	OB90280A	Cord Bushing (USA, CAN, EP, UK, AUS)	1				
	OB90283A	Cord Bushing (OTR, SAU, JAN)	1				
15	OH06525A	Rear Panel (USA, CAN, EP, UK, AUS, JPN)	1				
	OH06526A	Rear Panel (OTR, SAU)	1				
16	OM05611A	Voltage Lock Plate (OTR, SAU)	1	L01	OE00868A	BT3x8 + Binding	

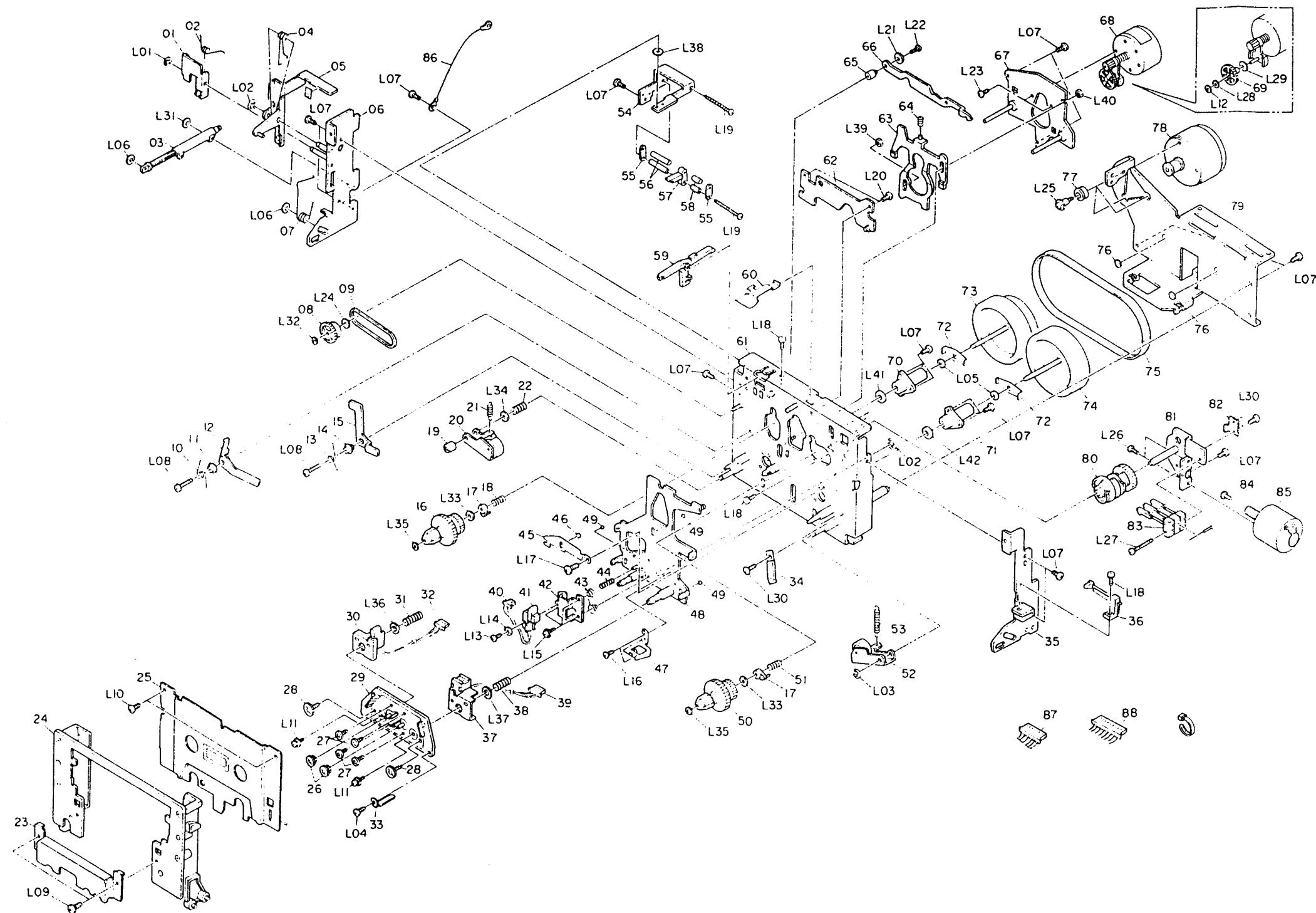
3.3. Front Chassis Ass'y (B01)

Schematic Ref. No.	Part No.	Description	Q'ty
B01	-	Front Chassis Ass'y	1
01	OH06432B	Eject Knob	1
02	OJ07048B	Eject Knob Spring	1
03	HA06566D	Display Lens Ass'y	1
04	OH06430B	Front Chassis	1
05	OJ07077A	Eject Holder	1
06	BA07986A	Headphone P.C.B. Ass'y	1
07	OH06436B	Slide Knob	1
08	BA08841A	Timer Switch P.C.B. Ass'y	1
09	OJ06253A	Push Knob Spring	9
10	OH06447B	Push Knob	9
11	HA06569C	Filter DR Ass'y	1
12	OH06426B	Control Knob 3CD	2
13	BA08855A	Front P.C.B. Ass'y	1
L01	OE00868A	BT3x8 + Binding	

3.4. Mechanism Ass'y (B02)

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty	
B02	CA09201A	Mechanism Ass'y	1		74	OC82698A	Take-up Flywheel	1
01	0C85309A	Eject Arm	1	75	0C82702A	Capstan Belt	1	
02	0C85310A	Eject Arm Spring	1	77	0C82718A	Thrust Plate	2	
03	CA80006A	Pneumatic Damper Ass'y	1	78	0C82726A	Floating Rubber	3	
04	0C82720A	Eject Lever Spring	1	79	CA81988A	Capstan Motor Ass'y	1	
05	0C85414A	Eject Lever	1	80	0C85320A	Flywheel Holder	1	
06	0C85301A	Cassette Case Holder L	1	81	0C81417A	Cam Gear B	1	
07	0C80019B	Eject Spring	1	82	0C81418A	Control Motor Holder	1	
08	0C80620A	Back Tension Arm Pulley	1	83	0C81416A	Thrust Spring B	1	
09	0C80621A	Back Tension Arm Belt	1	84	0C80027A	Mode Switch	3	
10	0C80617A	Back Tension Arm Spring	1	85	0C81415A	Worm Thrust Bush	1	
11	0C80618A	Back Tension Arm Collar	1	86	CA81646A	Control Motor Ass'y 30	1	
12	0C80619A	Back Tension Arm	1	87	0C86111A	Mechanism GND Ass'y	1	
13	0C85425A	Lock Lever Spring	1	88	CA81673A	SP Connector Ass'y	1	
14	0C85426A	Lock Lever Collar	1		CA81672A	9P Connector Ass'y	1	
15	0C85427A	Lock Lever	1	L01	OE00698A	E-Ring 2.5mm		
16	CA80726A	Supply Reel Hub Ass'y	1	L02	OE00181A	E-Ring 3mm		
17	0C80612A	Spring Holder	2	L03	OE00222A	E-Ring 2mm		
18	0C80614A	Supply Reel Hub Spring	1	L04	OE00866A	M2.6x4 + Binding		
19	0C81421A	Supply Pressure Roller Arm Adjustment Nut	1	L05	OE00912A	Washer FT25		
20	CA80366A	Supply Pressure Roller Arm Ass'y	1	L06	OE03052A	CS Stopper 2.4mm		
21	0C81420A	Supply Pressure Roller Arm Spring	1	L07	OE03042A	FT2.5x5 + Pan		
22	0C81422A	Supply Pressure Roller Arm Track Spring	1	L08	OE03667A	ST2.5x8 + Pan		
				L09	OE03202A	M2.6x3 + Binding (Black Chromate)		
23	0H04415C	Head Mount Cover	1	L10	OE03437A	FT2.5x3.5 + Pan (Black Chromate)		
24	CA80200B	Cassette Case Ass'y	1	L11	OE03654A	M2x4 + Pan (3A)		
25	CA81949A	Cover Plate Ass'y	1	L12	OE03509A	Washer 1.3x3.4x0.5		
26	0C08762A	Head Height Adjustment Gear	2	L13	OE03232A	M1.7x7 + Pan		
27	0C08761A	Head Height Adjustment Screw	4	L14	OE03222A	Washer 1.8x3.8x0.3		
28	0C08763A	Azimuth Alignment Screw	1	L15	OE03655A	M2x5 + Pan (2A)		
29	CA08637A	Head Mount Base Sub Ass'y	1	L16	OE03234A	M2x3 + Pan		
30	CA08659C	R-3L Record Head Ass'y	1	L17	OE03228A	FT3x4 + Pan		
31	0C08776A	Head Plate Spring L	1	L18	OE03236A	M2x5 + Pan (2A)		
32	CA81676A	RH 4P Connector Ass'y	1	L19	OE03231A	M2x30 + Pan		
33	0C80605A	Wire Clamper	1	L20	OE03041A	FT2.5x4 + Pan		
34	0C80610A	Cassette Case Spring	1	L21	OE03233A	Washer 2.6x8x1		
35	0C80010D	Cassette Case Holder R	1	L22	OE03230A	ST2.6x12 + Pan		
36	0C80012A	Sensor Switch	1	L23	OE03045A	M2.6x3 + Binding		
37	CA08658C	P2H-3L Playback Head Ass'y	1	L24	OE03226A	Washer 2.1x4.5x0.1		
38	0C08775A	Head Plate Spring R	1	L25	0C82725A	M2.6x9 Washer Faced		
39	CA81675A	PH 4P Connector Ass'y	1	L26	OE00691A	M2x3 + Pan		
40	CA81674A	EH 2P Connector Ass'y	1	L27	OE03044A	FT2.5x20 + Pan		
41	GA02201A	E-4F Erase Head	1	L28	OE03653A	Washer 1.6x4x0.25		
42	0C08768A	E.H. Hold Plate	1	L29	OE03508A	Washer 1.7x6x0.25		
43	0C08889A	E.H. Hold Plate Tapering Spring	2	L30	OE03035A	M2x3.2 + Truss		
44	0C08886A	E.H. Hold Plate Spring	1	L31	OE03235A	Washer 2x5x0.25		
45	0C82710A	Head Base Hold Plate	1	L32	OE03225A	Washer 1.8x3.8x0.5		
46	0C80004A	Steel Ball 3mm	1	L33	OE03194A	Washer 2.1mm		
47	0C08771A	Tape Guide Plate	1	L34	0C85423A	S. Thrust Spring Washer		
48	CA80365A	Head Base Ass'y	1	L35	OE03049A	Washer 1.8x3.2x0.5		
49	0C80007A	Steel Ball 2mm	3	L36	0C08774A	Plate Washer L		
50	CA80725A	Take-up Reel Hub Ass'y	1	L37	0C08773A	Plate Washer R		
51	0C80613A	Take-up Reel Hub Spring	1	L38	OE03227A	Washer 2.7x5x0.5		
52	CA80368A	Take-up Pressure Roller Arm Ass'y	1	L39	OE03237A	Nut Hex. M2.6		
53	0C81423A	Take-up Pressure Roller Arm Spring	1	L40	OE00694A	Nut M2		
54	0C85429A	Switch Hold Plate	1	L41	0C82716A	Capstan Washer S		
55	0C80623A	Switch Plate	2	L42	0C82717A	Capstan Washer T		
56	0C80624A	Switch Collar A	2					
57	0C80626A	Leaf Switch	1					
58	0C80625A	Switch Collar B	2					
59	0C80017B	Record Protector Lever	1					
60	0C80022B	Cassette Hold Spring	1					
61	CA80736A	Mechanism Chassis Ass'y	1					
62	CA80011B	Shut-off P.C.B. Ass'y	1					
63	CA80204A	Brake Ass'y	1					
64	0C80628A	Brake Spring B	1					
65	0C80630A	Brake Arm Collar	1					
66	0C80629A	Brake Arm	1					
67	0C82724A	Reel Motor Holder	1					
68	CA81699A	Reel Motor Ass'y	1					
69	0C83380A	Idle Gear	1					
70	0C82701A	Supply Capstan Flange	1					
71	0C82700A	Take-up Capstan Flange	1					
72	0C80428A	Hold Spring	2					
73	0C82699A	Supply Flywheel	1					

3.4. Mechanism Ass'y (B02)



4. MOUNTING DIAGRAMS AND PARTS LIST

4.1. Bias Volume P.C.B. Ass'y

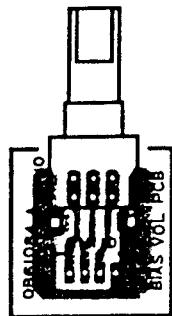


Fig. 4.1

4.2. Input Volume P.C.B. Ass'y

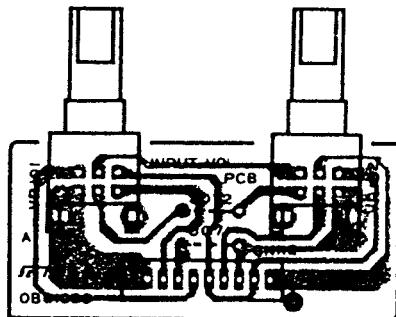


Fig. 4.2

4.3. Timer Switch P.C.B. Ass'y

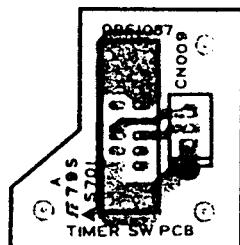


Fig. 4.3

4.4. Front P.C.B. Ass'y

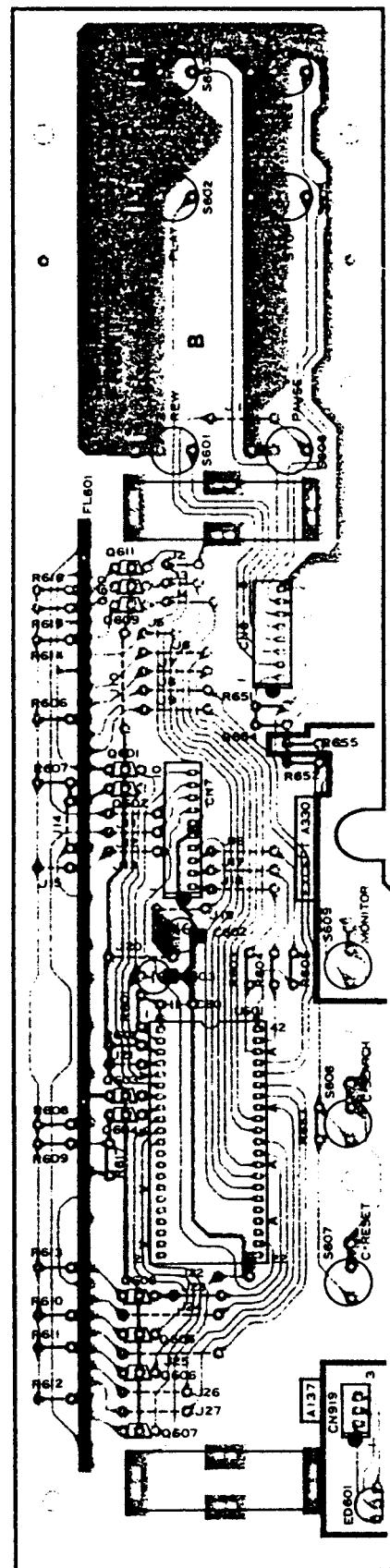


Fig. 4.4

4.5. Power Supply & Logic P.C.B. Ass'y

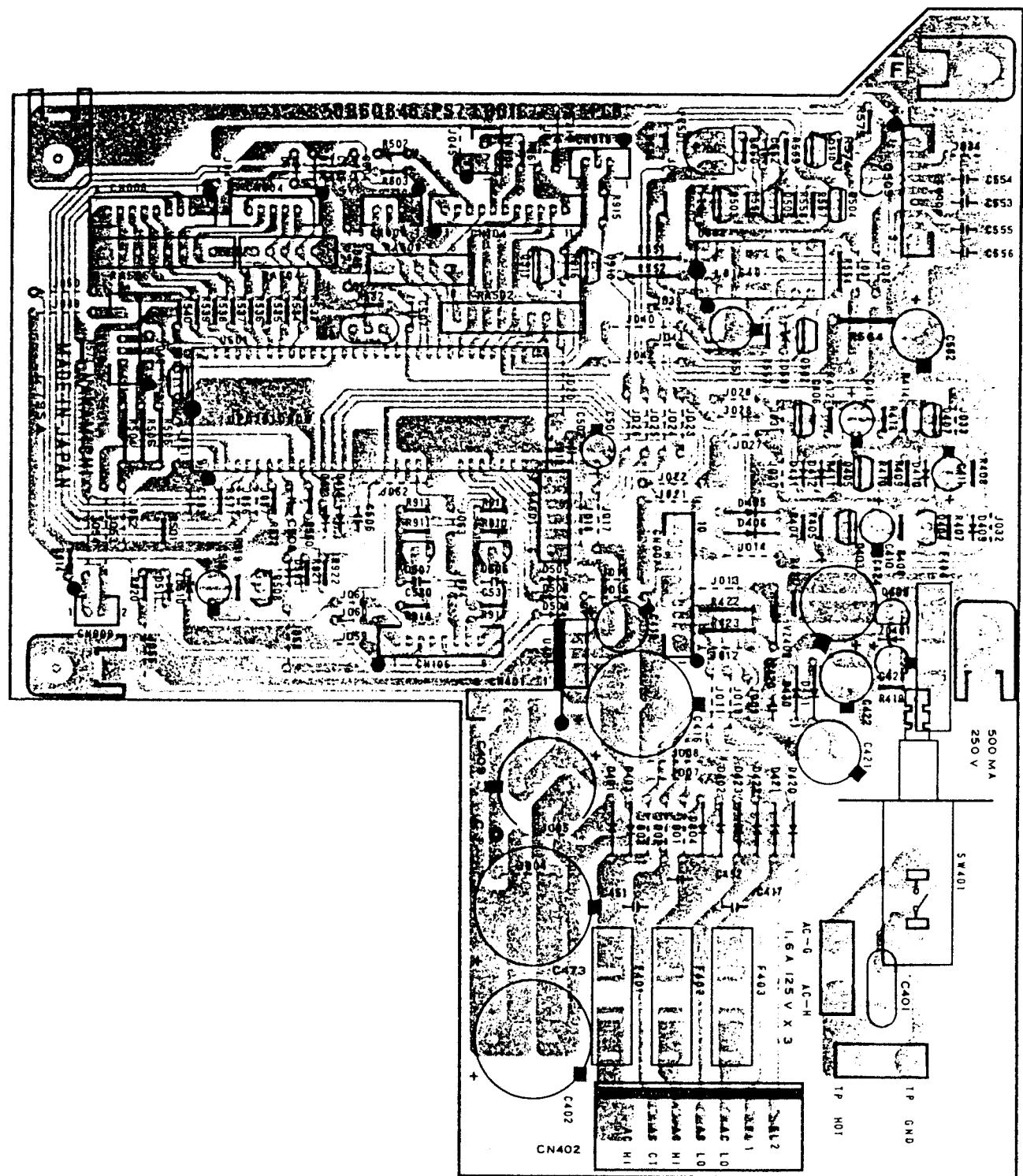


Fig. 4.5

4.6. Main P.C.B. Ass'y

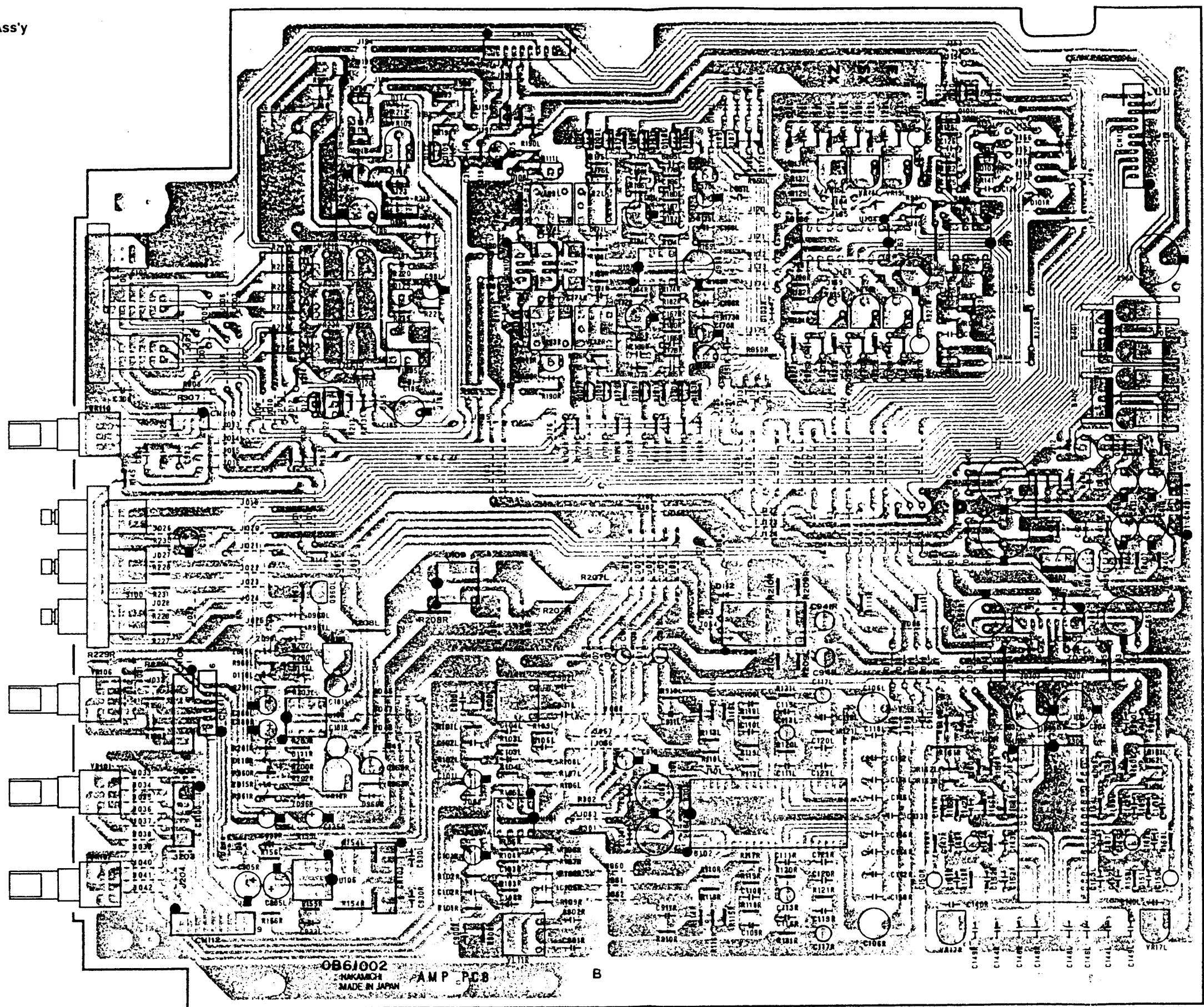


Fig. 4.6

NOTES: 1. Abbreviations

TR – Transistor, SID – Silicon Diode, ZD – Zener Diode, Varicap – Variable Capacitance Diode
 RK – Carbon Resistor, RM – Metal Film Resistor, RF – Fail Safe Type Resistor, RC – Cement Resistor
 CE – Electrolytic Capacitor, CML – Mylar Capacitor, CC – Ceramic Capacitor, CPP – PP Capacitor,
 CMM – Metallized Mylar Capacitor, CSP – Polystyrene Capacitor, C – Mica Capacitor,
 CT – Tantalum Capacitor

2. Description of capacitor: 10 16V = 10 μ 16V

4.1. Bias Volume P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08836A	Bias Volume P.C.B. Ass'y
	OB61084A	Bias Volume P.C.B.
VR110	OB30159A	VR 10KBx2
CN110	OB85202A	4P Connector Ass'y

Schematic

Ref. No.	Part No.	Description
	R655	0B09693A RK 4.7K 1/6W J
	C601	0B41681A CC 100P 50V J
	C602	0B40980A CE 100 6.3V
	C603	0B40173A CE 1 50V
	S601,602	0B70214A Tact Switch
	S603,604	0B70214A Tact Switch
	S605,606	0B70214A Tact Switch
	S607,608	0B70214A Tact Switch
	S609	0B70214A Tact Switch
	CN7	0B85205A 10P H-Connector Ass'y
	CN8	0B85206A 8P H-Connector Ass'y
	FL601	0B90461A FL Display FIP13BW7Y
	0J07086A	FL Cushion
	0J06238A	FL Stopper

Schematic

Ref. No.	Part No.	Description
	C402	0B40801A CE 6800 25V
	C409	0B40363A CE 2200 25V
	C410	0B40630A CE 22 10V (LN)
	C411,412	0B40255A CE 1 50V (LN)
	C416	0B40362A CE 6800 16V
	C417	0B41298A CML 0.1 50V J
	C419	0B40067A CE 470 10V
	C420	0B41298A CML 0.1 50V J
	C421	0B40798A CE 330 35V
	C422	0B40120A CE 100 50V
	C423	0B40100A CE 10 35V
	C424	0B40802A CE 1000 35V
	C451,452	0B41298A CML 0.1 50V J
	C473	0B40801A CE 6800 25V
	S401	0B71012A Power Switch 1P TV-4

4.2. Input Volume P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08837A	Input Volume P.C.B. Ass'y
	OB61086A	Input Volume P.C.B.
/R101	OB30156A	VR 100KMN C.C.
VR102	OB30157A	VR 100KAx2
CN112	OB85203A	9P Connector Ass'y

4.5. Power Supply & Logic P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08853A	Power Supply & Logic P.C.B. Ass'y (Except JPN)
	BA08851A	Power Supply & Logic P.C.B. Ass'y (JPN)
	U502	0B11368A IC LB1649
	O502	0B10062A TR DTC144ES
	O503	0B10029A TR 2SA933S (S)
	Q504	0B10062A TR DTC144ES
	O505	0B10033A TR 2SC1740S (S)
	Q509	0B06066A TR 2SD471
	Q510	0B10368A TR DTC144TS
	ZD501	0B12153A ZD 6.2V JS B2
	ZD502	0B12288A ZD 5.1V MTZ25.1B
	D413,414	0B06398A SiD 1SS176
	D503,504	0B06398A SiD 1SS176
	D505,506	0B06398A SiD 1SS176
	VR501	0B32192A Semi VR 5K

- Motor Driver -

Schematic Ref. No.	Part No.	Description
	BA08841A	Timer Switch P.C.B. Ass'y
	OB61087A	Timer Switch P.C.B.
\$701	OB70175A	Slide Switch 2-4
CN009	OB83936A	3P H-Connector Ass'y

- Power Supply -

Schematic Ref. No.	Part No.	Description
	U401	0B11753A IC NJM7805FA
	Q403,404	0B10033A TR 2SC1740S (S)
	Q405	0B10033A TR 2SC1740S (S)
	Q406	0B10058A TR DTA114ES
	Q407	0B10033A TR 2SC1740S (S)
	Q409	0B10015A TR 2SA1020

U502	0B11368A	IC LB1649
O502	0B10062A	TR DTC144ES
O503	0B10029A	TR 2SA933S (S)
Q504	0B10062A	TR DTC144ES
O505	0B10033A	TR 2SC1740S (S)
Q509	0B06066A	TR 2SD471
Q510	0B10368A	TR DTC144TS
ZD501	0B12153A	ZD 6.2V JS B2
ZD502	0B12288A	ZD 5.1V MTZ25.1B
D413,414	0B06398A	SiD 1SS176
D503,504	0B06398A	SiD 1SS176
D505,506	0B06398A	SiD 1SS176
VR501	0B32192A	Semi VR 5K

I.4. Front P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08855A	Front P.C.B. Ass'y
	OB61082B	Front P.C.B.
J601	OB11860A	IC MSC7112-01
J601,602	OB10030A	TR 2SC1740S (S)
J603,604	OB10030A	TR 2SC1740S (S)
J605,606	OB10030A	TR 2SC1740S (S)
J607,608	OB10030A	TR 2SC1740S (S)
J609,610	OB10030A	TR 2SC1740S (S)
J611	OB10030A	TR 2SC1740S (S)
R601	OB09713A	RK 33K 1/6W J
R602	OB09701A	RK 10K 1/6W J
R603,604	OB09677A	RK 1K 1/6W J
R605	OB09677A	RK 1K 1/6W J
R606,607	OB09717A	RK 47K 1/6W J
R608,609	OB09717A	RK 47K 1/6W J
R610,611	OB09717A	RK 47K 1/6W J
R612,613	OB09717A	RK 47K 1/6W J
R614,615	OB09717A	RK 47K 1/6W J
R616	OB09717A	RK 47K 1/6W J
R617	OB09629A	RK 10 1/6W J
R651	OB09701A	RK 10K 1/6W J
R652	OB09693A	RK 4.7K 1/6W J
R653	OB09705A	RK 15K 1/6W J
R654	OB09701A	RK 10K 1/6W J

Schematic Ref. No.	Part No.	Description
	D401,402	0B12365A SiD 1SR35-100A
	D403,404	0B12365A SiD 1SR35-100A
	D405,406	0B12365A SiD 1SR35-100A
	D409,410	0B06398A SiD 1SS176
	D411,412	0B06398A SiD 1SS176
	D420,421	0B12365A SiD 1SR35-100A
	D422,423	0B12365A SiD 1SR35-100A
	D430,431	0B12365A SiD 1SR35-100A
	R404	0B09709A RK 22K 1/6W J
	R405	0B09703A RK 12K 1/6W J
	R406	0B09701A RK 10K 1/6W J
	R407,408	0B09693A RK 4.7K 1/6W J
	R409	0B09719A RK 56K 1/6W J
	R410	0B09713A RK 33K 1/6W J
	R411,412	0B09693A RK 4.7K 1/6W J
	R413	0B09719A RK 56K 1/6W J
	R414	0B09713A RK 33K 1/6W J
	R419	0B09685A RK 2.2K 1/6W J
	R421	0B09701A RK 10K 1/6W J
	R422,423	0B09653A RK 100 1/6W J
	C401	0B41825A CC 4700P AC400V (Except JPN)
	0B41826A	CC 4700P AC250 (JPN)

U501	0B11884A	IC PD 75106CW
Q501	0B10068A	TR DT C114ES
Q506,507	0B10029A	TR 2SA933S (S)

- MPU -

Schematic Ref. No.	Part No.	Description
Q508	OB10029A	TR 2SA933S (S)
ZD510	OB12695A	ZD 10V MA4100(N)
D501,502	OB06398A	SiD 1SS176
D511	OB06398A	SiD 1SS176
X501	OB92045A	
RA501	OB21101A	R Network 10Kx3
RA502	OB21102A	R Network 10Kx6
RA503	OB21101A	R Network 10Kx3
RA504	OB21101A	R Network 10Kx3
RA506	OB21102A	R Network 10Kx6
R501	OB09689A	RK 3.3K 1/6W J
R502,503	OB09701A	RK 10K 1/6W J
R504,505	OB09701A	RK 10K 1/6W J
R506	OB09701A	RK 10K 1/6W J
R532,533	OB09677A	RK 1K 1/6W J
R534,535	OB09677A	RK 1K 1/6W J
R536,537	OB09677A	RK 1K 1/6W J
R538,539	OB09677A	RK 1K 1/6W J
R540	OB09677A	RK 1K 1/6W J
R550	OB09701A	RK 10K 1/6W J
R571	OB09677A	RK 1K 1/6W J
R572,573	OB09701A	RK 10K 1/6W J
R910,911	OB09709A	RK 22K 1/6W J
R912,913	OB09725A	RK 100K 1/6W J
R914	OB09701A	RK 10K 1/6W J
R917,918	OB09725A	RK 100K 1/6W J
R919	OB09721A	RK 68K 1/6W J
R920	OB09669A	RK 470 1/6W J
R921	OB09725A	RK 100K 1/6W J
R922	OB09701A	RK 10K 1/6W J
C501	OB40077A	CE 47 16V
C502	OB41298A	CML 0.1 50V J
C503	OB41302A	CML 0.22 50V J
C504,505	OB41286A	CML 0.01 50V J
C506,507	OB41274A	CML 1000P 50V J
C508	OB41944A	CC 1000P 50V K
C510	OB40756A	CE 1 50V (LN)
C530,531	OB41290A	CML 0.022 50V J
CN004	OB881462A	5P T-Post
CN007	OB884302A	10P T-Post
CN008	OB884296A	8P T-Post
CN009	OB884281A	3P T-Post
CN104	OB884305A	11P T-Post
CN105	OB884165A	8P T-Post
CN516	OB884286A	5P T-Post

- Miscellaneous -

OB60846F Power Supply & Logic P.C.B.

4.6. Main P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
BA08849A	Main P.C.B. Ass'y	

- Input Amp. -

U101	OB06146A	IC NJM4558DD	D103L,R	OB06398A	SiD 1SS176
VL11L,R	OB851373A	L-C Block (MPX)	D104L,R	OB06398A	SiD 1SS176
R101L,R	OB09749A	RK 1M 1/6W J	D105L,R	OB06398A	SiD 1SS176
R102L,R	OB09717A	RK 47K 1/6W J	VL12L,R	OB51374A	Coil 15.8mH
R103L,R	OB09717A	RK 47K 1/6W J	VL13L,R	OB51370A	Trap Coil 1.05mH
R104L,R	OB09709A	RK 22K 1/6W J	R169L,R	OB09711A	RK 27K 1/6W J
R105L,R	OB09677A	RK 1K 1/6W J	R170	OB09701A	RK 10K 1/6W J
R106L,R	OB09677A	RK 1K 1/6W J	R171	OB09725A	RK 100K 1/6W J
R107L,R	OB25236A	RM 2.67K 1/4W F	R172L,R	OB09709A	RK 22K 1/6W J
R108L,R	OB25236A	RM 2.67K 1/4W F	R173L,R	OB09733A	RK 220K 1/6W J
R109L,R	OB25267A	RM 5.62K 1/4W F	R174L,R	OB25195A	RM 1K 1/4W F
R900L,R	OB09725A	RK 100K 1/6W J	R175L,R	OB09685A	RK 2.2K 1/6W J
C101L,R	OB40778A	CE 10 25V	R176L,R	OB09677A	RK 1K 1/6W J
C102L,R	OB41976A	CC 33P 50V J	R177L,R	OB25252A	RM 3.92K 1/4W F
C103L,R	OB41978A	CC 68P 50V J	R178L,R	OB09694A	RK 5.1K 1/6W J
C104L,R	OB41976A	CC 33P 50V J	R179L,R	OB09741A	RK 470K 1/6W J
C105L,R	OB01802A	CML 2200P 50V J	R180L,R	OB09693A	RK 4.7K 1/6W J
C900L,R	OB09989A	CC 120P 50V J	R181L,R	OB09741A	RK 470K 1/6W J
C901L,R	OB09189A	CML 2700P 50V J	R182L,R	OB09695A	RK 5.6K 1/6W J
C902L,R	OB01804A	CML 3900P 50V J	R183L,R	OB09741A	RK 470K 1/6W J
CN112	OB84084A	9P T-Post	R184L,R	OB09733A	RK 220K 1/6W J

- Encoder -

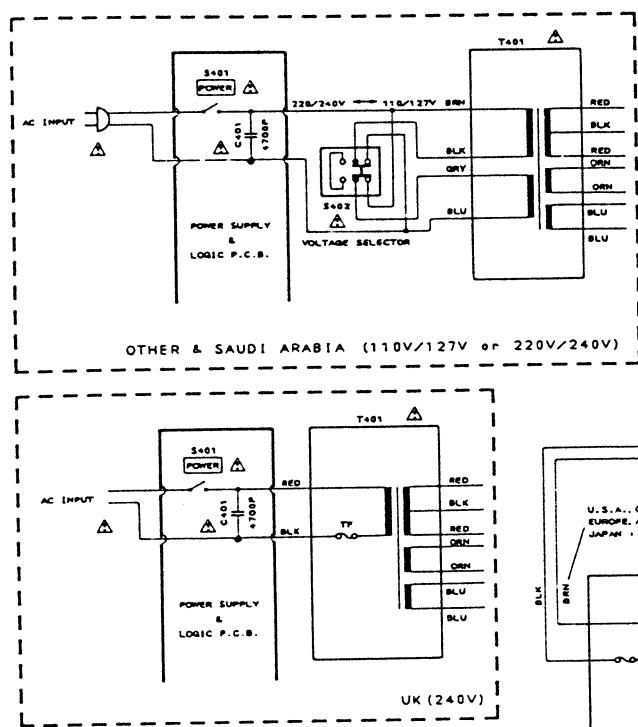
U102	OB11363A	IC CX20188	R189L,R	OB09709A	RK 22K 1/6W J
ZD301,302	OB12695A	ZD 10V MA4100(N)	R190L,R	OB09695A	RK 5.6K 1/6W J
R110L,R	OB25267A	RM 5.62K 1/4W F	R191	OB09717A	RK 47K 1/6W J
R111L,R	OB25195A	RM 1K 1/4W F	R192	OB09701A	RK 10K 1/6W J
R114L,R	OB25304A	RM 13.7K 1/4W F	R193	OB09721A	RK 68K 1/6W J
R115L,R	OB25251A	RM 3.83K 1/4W F	R194	OB09701A	RK 10K 1/6W J
R116L,R	OB25244A	RM 3.24K 1/4W F	R195L,R	OB09629A	RK 10 1/6W J
R117L,R	OB09749A	RK 1M 1/6W J	R950L,R	OB09701A	RK 10K 1/6W J
R118L,R	OB25171A	RM 562 1/4W F	C165L,R	OB41133A	CPP 2200P 100V G
R119L,R	OB25324A	RM 22.1K 1/4W F	C166L,R	OB41278A	CML 2200P 50V J
R120L,R	OB09698A	RK 7.5K 1/6W J	C167L,R	OB05582A	CML 0.022 50V J
R121L,R	OB09673A	RK 680 1/6W J	C168L,R	OB09045A	CML 0.027 50V J
R131L,R	OB09700A	RK 9.1K 1/6W J	C169L,R	OB05682A	CML 0.068 50V J
R301,302	OB09508A	RF 56 1/4W J	C170L,R	OB40557A	CE 1.50V
R303	OB25398A	RM 130K 1/4W F	C171L,R	OB01914A	CML 3300P 50V J
R910L,R	OB25099A	RM 100 1/4W F	C172L,R	OB40559A	CE 47 16V
C106L,R	OB40474A	CE 47 16V (BP)	C173L,R	OB09322A	CPP 330P 100V J
C109L,R	OB41133A	CPP 2200P 100V G	C174L,R	OB09834A	CPP 2200P 100V J
C110L,R	OB41133A	CPP 2200P 100V G	C175	OB40778A	CE 10 25V
C111L,R	OB41139A	CPP 3900P 100V G	C310	OB05550A	CML 1000P 50V J
C112L,R	OB41306A	CML 0.47 50V J	C950	OB40798A	CE 330 35V
C113L,R	OB40817A	CE 1.50V (BP)	C951L,R	OB05550A	CML 1000P 50V J
C114L,R	OB41300A	CML 0.15 50V J	CN101	OB881461A	4P T-Post
C115L,R	OB41288A	CML 0.015 50V J			
C116L,R	OB41302A	CML 0.22 50V J			
C117L,R	OB40817A	CE 1.50V (BP)			
C118L,R	OB41296A	CML 0.068 50V J			
C119L,R	OB41295A	CML 0.056 50V J			
C120L,R	OB41143A	CPP 5600P 100V G			
C121L,R	OB05561A	CML 0.01 50V J			
C301,302	OB40608A	CE 470 16V			
C910	OB40778A	CE 10 25V			
C911L,R	OB09989A	CC 120P 50V J			
C913L,R	OB09989A	CC 120P 50V J			

- Rec. Eq. Amp. -

U103	OB06146A	IC NJM4558DD	R103L,R	OB06398A	SiD 1SS176
U104	OB11027A	IC TC9145P	R104L,R	OB10033A	TR 2SC1740S (S)
Q101L,R	OB10033A	TR 2SC1740S (S)	Q102	OB10029A	TR 2SA933S (S)
Q102	OB10029A	TR 2SA933S (S)	Q930	OB10029A	TR 2SA933S (S)
D101L,R	OB06398A	SiD 1SS176	R101L,R	OB06398A	SiD 1SS176
VR13L,R	OB32193A	Sennai VR 10K	VR13L,R	OB32193A	Sennai VR 10K
VR14L,R	OB32193A	Sennai VR 10K	VR14L,R	OB32194A	Sennai VR 20K
VR15L,R	OB32194A	Sennai VR 20K	R111L,R	OB09733A	RK 220K 1/6W J
R111L,R	OB09733A	RK 220K 1/6W J	R122L,R	OB09705A	RK 15K 1/6W J
R122L,R	OB09703A	RK 12K 1/6W J	R123L,R	OB25276A	RM 6.98K 1/4W F
R124L,R	OB25276A	RM 6.98K 1/4W F	R125L,R	OB09749A	RK 1M 1/6W J
R125L,R	OB09749A	RK 1M 1/6W J	R126L,R	OB09701A	RK 10K 1/6W J
R126L,R	OB09701A	RK 10K 1/6W J	R127L,R	OB09701A	RK 10K 1/6W J
R127L,R	OB09701A	RK 10K 1/6W J	R129L,R	OB09693A	RK 4.7K 1/6W J
R129L,R	OB09693A	RK 4.7K 1/6W J	R130L,R	OB09697A	RK 6.8K 1/6W J
R130L,R	OB09697A	RK 6.8K 1/6W J	R132L,R	OB09689A	RK 3.3K 1/6W J

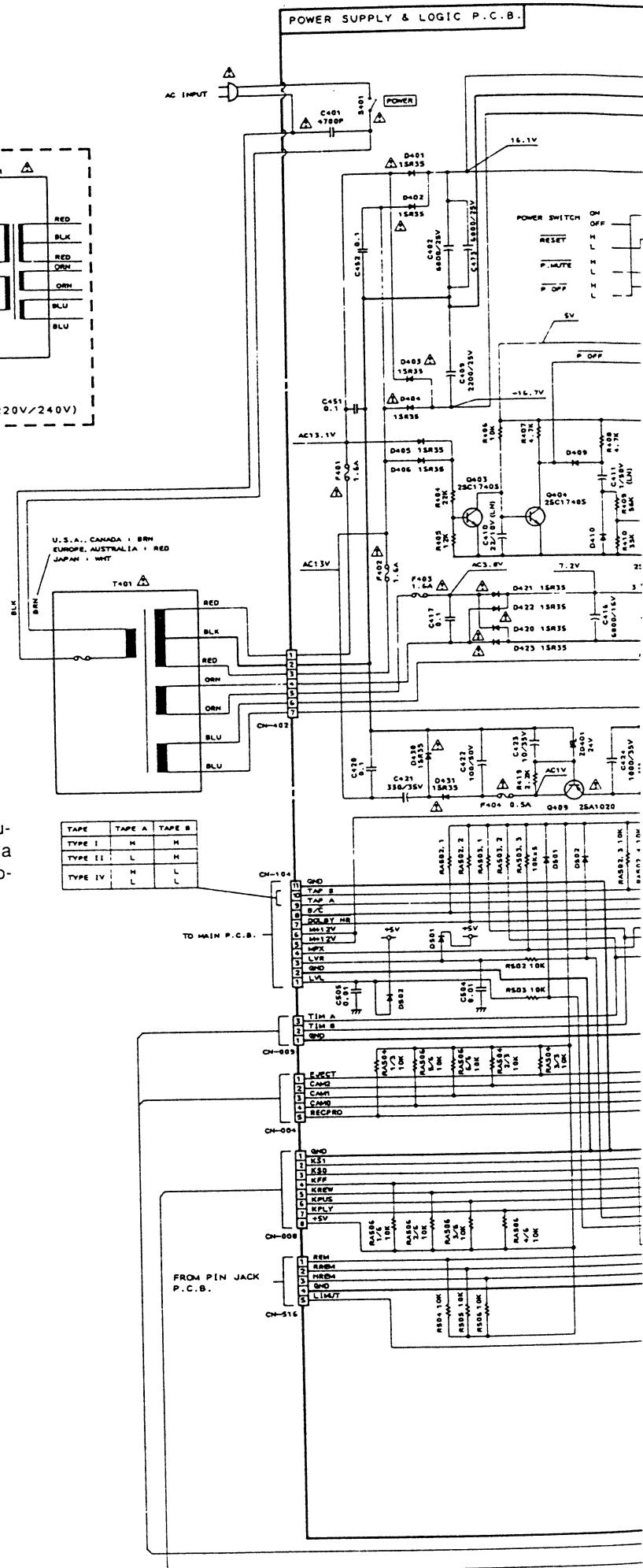
Schematic Ref. No.	Part No.	Description		Schematic Ref. No.	Part No.	Description		Schematic Ref. No.	Part No.	Description						
R133L,R	OB09701A	RK	10K	1/6W J	C930L,R	OB01804A	CML	3900P 50V J	C189	OB41261A	CPP	0.033 100V J				
R134L,R	OB09701A	RK	10K	1/6W J	C933L,R	OB41978A	CC	68P 50V J	C192	OB40778A	CE	10 25V				
R139	OB09717A	RK	47K	1/6W J	CN103	OB81637A	5P T-Post		C952L,R	OB40608A	CE	470 16V				
R140,141	OB09725A	RK	100K	1/6W J	- Power Supply -						C981	OB40115A	CE	4.7 50V		
R142,143	OB09733A	RK	220K	1/6W J	ZD401	OB12705A	ZD	5.1V	CN102	OB81459A	2P T-Post					
R144	OB09733A	RK	220K	1/6W J	Q401,402	OB06452A	TR	2SD1406	- Bias Adj. -							
R145,146	OB09693A	RK	4.7K	1/6W J	Q403,404	OB06142A	TR	2SC2240	VR21L,R	OB32195A	Semi VR	50K				
R310	OB09693A	RK	4.7K	1/6W J	Q405,406	OB10050A	TR	2SA970	VR22L,R	OB32194A	Semi VR	20K				
R311	OB09701A	RK	10K	1/6W J	Q407	OB06451A	TR	2SB1015	VR23L,R	OB32193A	Semi VR	10K				
R312	OB09693A	RK	4.7K	1/6W J	ZD401	OB12705A	MA4051N-M		R222L,R	OB09705A	RK	15K	1/6W J			
R921L,R	OB09705A	RK	15K	1/6W J	R401,402	OB09685A	RK	2.2K	R223L,R	OB09697A	RK	6.8K	1/6W J			
R922L,R	OB09694A	RK	5.1K	1/6W J	R403	OB09677A	RK	1K	R224L,R	OB09653A	RK	100	1/6W J			
R923L,R	OB09701A	RK	10K	1/6W J	R404	OB25667A	RM	3.9K	- Meter Amp. -							
R924L,R	OB09701A	RK	10K	1/6W J	R405	OB25669A	RM	4.7K	VR21L,R	OB32195A	Semi VR	50K				
R930,931	OB09725A	RK	100K	1/6W J	R406,407	OB09685A	RK	2.2K	VR22L,R	OB32194A	Semi VR	20K				
R932	OB09717A	RK	47K	1/6W J	R408	OB09677A	RK	1K	VR23L,R	OB32193A	Semi VR	10K				
C124	OB41971A	CC	0.1	50V Z	R409	OB22570A	RM	12K	R222L,R	OB09705A	RK	15K	1/6W J			
C125L,R	OB09993A	CML	820P	50V J	R410	OB25308A	RM	15K	R223L,R	OB09697A	RK	6.8K	1/6W J			
C126L,R	OB05681A	CML	0.01	50V J	R411	OB09669A	RK	470	R224L,R	OB09653A	RK	100	1/6W J			
C128L,R	OB09045A	CML	0.027	50V J	R412	OB09682A	RK	1.6K	- Decoder -							
C920L,R	OB40474A	CE	47	16V (BP)	C403,404	OB40800A	CE	100 25V	ZD401	OB12705A	ZD	3.3V				
C922,923	OB41971A	CC	0.1	50V Z	C405	OB41971A	CC	0.1 50V Z	R401,402	OB09685A	TR	2SD1406	VR21L,R	OB32195A	Semi VR	50K
C924	OB41971A	CC	0.1	50V Z	C407	OB40705A	CE	3300 16V	R403,404	OB09677A	TR	2SC2240	VR22L,R	OB32194A	Semi VR	20K
C925L,R	OB09045A	CML	0.027	50V J	C408	OB41971A	CC	0.1 50V Z	R405	OB09669A	TR	2SA970	VR23L,R	OB32193A	Semi VR	10K
C926L,R	OB05659A	CML	5600P	50V J	C409,411	OB40800A	CE	100 25V	R406,407	OB09685A	RK	2.2K	R401,402	OB09685A	TR	2SC2240
C927	OB40799A	CE	100	35V	C412	OB40361A	CE	2200 16V	R408	OB09677A	TR	2SA970	VR21L,R	OB32195A	Semi VR	50K
C931,932	OB41971A	CC	0.1	50V Z	C414	OB41971A	CC	0.1 50V Z	R409	OB09448A	Heat Sink (2)		R403,404	OB09677A	TR	2SC2240
- Decoder -																
U106	OB11363A	IC	CX20188		- Tape/Source Swtch -											
ZD303,304	OB12695A	ZD	10V MA4100(N)		U109	OB06124A	IC	NJM4558D		C180L,R	OB40257A	CE	3.3 50V (LN)			
VR17L,R	OB32192A	Semi VR	5K	D112	OB06398A	SiD	ISS176		C181L,R	OB40817A	CE	1 50V (BP)				
R158L,R	OB09673A	RK	680	1/6W J	R207L,R	OB09725A	RK	100K	1/6W J	C960	OB40608A	CE	470 16V			
R159L,R	OB09725A	RK	100K	1/6W J	R208L,R	OB09677A	RK	1K	1/6W J	- Push Swtch -						
R160L,R	OB25195A	RM	1K	1/4W F	R209L,R	OB09701A	TR	10K	1/6W J	R226	OB09701A	RK	10K	1/6W J		
R161L,R	OB09420A	RM	2.2K	1/4W F	R210L,R	OB09701A	RK	10K	1/6W J	R227	OB09685A	RK	2.2K	1/6W J		
R162L,R	OB25244A	RM	3.24K	1/4W F	C912L,R	OB40610A	CE	10 25V (BP)	R211L,R	OB090709A	RK	22K	1/6W J			
R163L,R	OB25251A	RM	3.83K	1/4W F	C914L,R	OB40610A	CE	10 25V (BP)	R228	OB09709A	RK	22K	1/6W J			
R164L,R	OB09749A	RK	1M	1/6W J	RL301	OB90279A	DS Relay		R230,231	OB09701A	RK	10K	1/6W J			
R165L,R	OB25171A	RM	562	1/4W F	- Bias Osc. -						R307	OB09711A	RK	27K	1/6W J	
R166L,R	OB25324A	RM	22.1K	1/4W F	C912L,R	OB40610A	CE	10 25V (BP)	R308,309	OB09725A	RK	100K	1/6W J			
R167L,R	OB09698A	RK	7.5K	1/6W J	C914L,R	OB40610A	CE	10 25V (BP)	C190L,R	OB09270A	CPP	470P 100V J				
R168L,R	OB09700A	RK	9.1K	1/6W J	RL301	OB90279A	DS Relay		C307	OB40559A	CE	47 16V				
R304,305	OB09508A	RF	56	1/4W J	- Bias Osc. -						C308	OB41971A	CC	0.1 50V Z		
R306	OB25398A	RM	130K	1/4W F	Q119	OB10055A	TR	DTA124ES		S100	OB70177A	Push Switch	MPX-DOLBY			
R940L,R	OB25099A	RM	100	1/4W F	Q120	OB10070A	TR	DTC143ES		S103	OB70176A	Push Switch TAPE	- Miscellaneous -			
C140L,R	OB09989A	CC	120P	50V J	Q121	OB10033A	TR	2SC1740S (S)		CN100	OB61002B	Main P.C.B.				
C141L,R	OB41133A	CPP	2200P	100V G	Q122	OB06069A	TR	2SB564		OB83926A	6P H-Connector					
C142L,R	OB41133A	CPP	2200P	100V G	Q123	OB10033A	TR	2SC1740S (S)		OB83926A	Ass'y 330					
C143L,R	OB41139A	CPP	3900P	100V G	Q124	OB06451A	TR	2SB1015		OB83926A	Ass'y 330					
C144L,R	OB41306A	CML	0.47	50V J	Q125	OB10222A	TR	2SC2705 (Y)		OB83926A	Ass'y 330					
C145L,R	OB40817A	CE	1 50V	(BP)	Q980	OB10053A	TR	DTA144ES		OB83926A	Ass'y 330					
C146L,R	OB41300A	CML	0.15	50V J	ZD305,306	OB12695A	ZD	10V		OB83926A	Ass'y 330					
C147L,R	OB41288A	CML	0.015	50V J	D114,115	OB06398A	SiD	ISS176		OB83926A	Ass'y 330					
C148L,R	OB41302A	CML	0.22	50V J	VL104	OB51047A	Bias Osc.			OB83926A	Ass'y 330					
C149L,R	OB41296A	CML	0.068	50V J	VL105	OB51372A	Osc. Tune			OB83926A	Ass'y 330					
C150L,R	OB40817A	CE	1 50V	(BP)	TH215	OB19006A	Thermistor	3.3K		OB83926A	Ass'y 330					
C151L,R	OB41295A	CML	0.056	50V J	VR109	OB32192A	Semi VR	5K		OB83926A	Ass'y 330					
C152L,R	OB41143A	CPP	5600P	100V G	R212,213	OB09665A	RK	330	1/6W J	OB83926A	Ass'y 330					
C153L,R	OB05681A	CML	0.01	50V J	R214	OB09701A	RK	10K	1/6W J	OB83926A	Ass'y 330					
C160L,R	OB41201A	CPP	100P	100V J	R216	OB09703A	RK	12K	1/6W J	OB83926A	Ass'y 330					
C303,304	OB40608A	CE	470	16V	R217	OB09653A	RK	100	1/6W J	OB83926A	Ass'y 330					
C940L,R	OB09989A	CC	120P	50V J	R218	OB09701A	RK	10K	1/6W J	OB83926A	Ass'y 330					
- Headphone Amp. -																
U105	OB11365A	IC	M5216		R221	OB09617A	RK	3.3	1/6W J	CN100	OB83926A	6P H-Connector				
R150L,R	OB25661A	RM	2.2K	1/4W F	R225	OB09701A	RK	10K	1/6W J	OB83926A	Ass'y 330					
R154L,R	OB09049A	RF	22	1/4W J	R980	OB09717A	RK	47K	1/6W J	OB83926A	Ass'y 330					
R155L,R	OB09717A	RK	47K	1/6W J	R981	OB09693A	RK	4.7K	1/6W J	OB83926A	Ass'y 330					
R156L,R	OB09717A	RK	47K	1/6W J	C185,186	OB40800A	CE	100 25V		OB83926A	Ass'y 330					
R229L,R	OB09717A	RK	47K1/6W J		C187	OB09993A	CML	820P 50V J		OB83926A	Ass'y 330					
C135L,R	OB40778A	CE	10 25V		C188	OB41255A	CPP	0.018 100V J		OB83926A	Ass'y 330					
C305L,R	OB40800A	CE	100 25V							OB83926A	Ass'y 330					

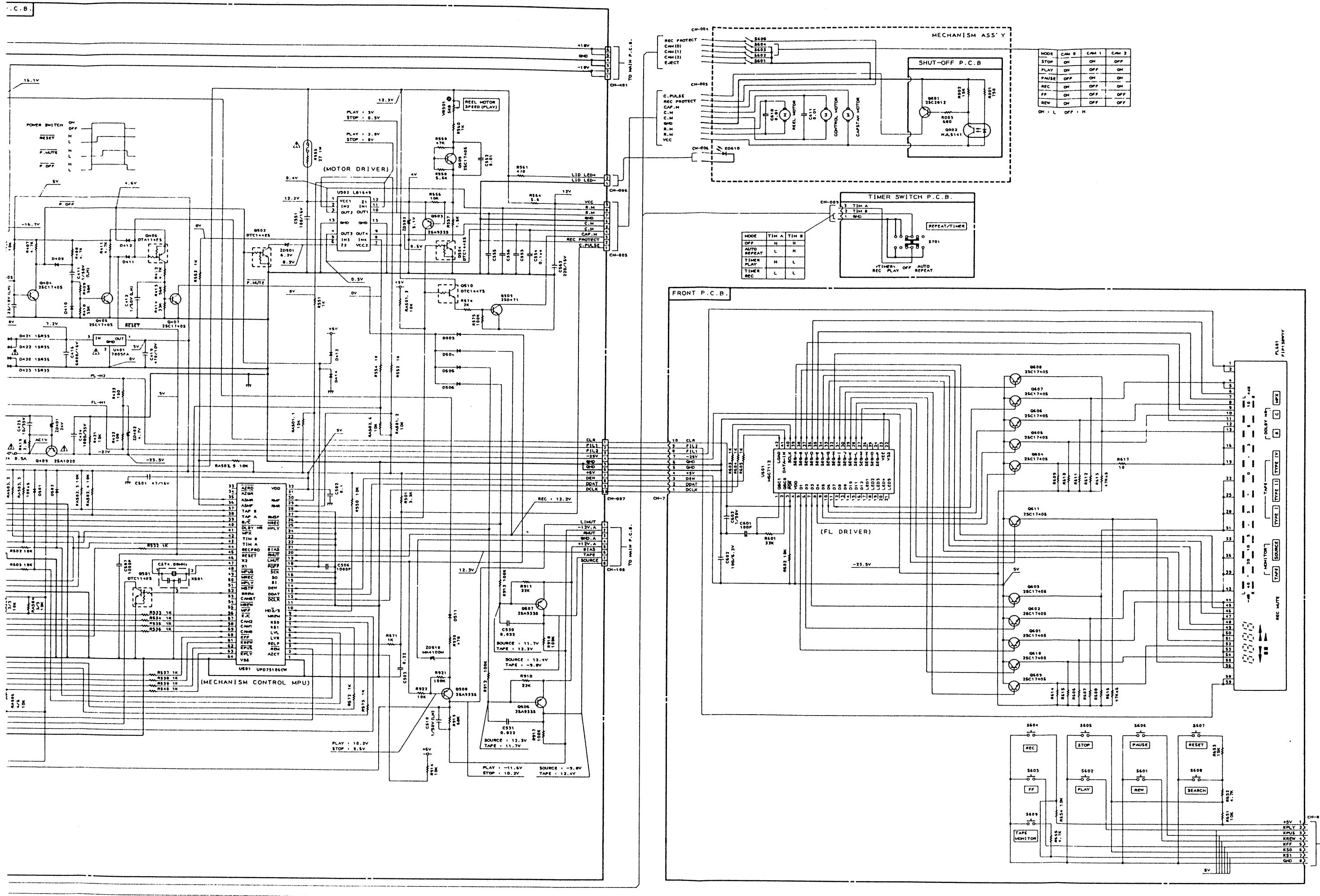
(2) Mechanism Control Section



Parts marked with the symbol  in the schematic diagram have critical characteristics.

Use ONLY replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.





5. SCHEMATIC DIAGRAMS (1) Amplifier Section

